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INCORPORATION OF TV TUBE GLASS WASTE IN ALUMINOUS PORCELAIN

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This work analyzes the reuse of TV tube glass waste as a method to provide alternative raw material for aluminous porcelain, through of replacement of natural sodic feldspar by up to 30 wt.%. Aluminous porcelain formulations containing TV tube glass waste were pressed and fired in air at 1300 °C using a fast-firing cycle. Ceramic pieces were characterized by X-ray diffraction, scanning electron microscopy, linear shrinkage, apparent density, apparent porosity, water absorption, and electrical resistivity. XRD and SEM results indicated that all aluminous porcelain pieces are composed essentially of mullite, quartz, and γ -alumina embedded in a vitreous matrix. The results also showed that the aluminous porcelain pieces containing TV tube glass waste presented low water absorption values between 0.42 and 0.45 %, apparent density between 2.44 and 2.46 g/cm³, and volume electrical resistivity between 1.91 and 2.93 x 10¹¹ Ω .cm. Thus, the TV tube glass waste could be used into aluminous porcelain formulations, in the range up to 30 wt.%, as a replacement for traditional flux material (sodic feldspar).